



## DECKS

If the deck is being constructed on a new house or is being built as an addition to an existing house, deck plans are required. A complete set of construction drawings are required, including:

1. Plan view of the deck, including the location of the footings,
2. Plat showing exact location and dimensions to property lines,
2. Section view of the deck, including details of the end away from the house, and the end nearest the house. The section should show the materials, the footings, and the heights of all of the components.

Chesterfield County Department of Building Inspections has attached a *How to Build a Deck Guide* for simple deck designs. It includes:

1. Typical layout plan view,
2. Section showing the common sizes for each structural member,
3. Details for both ends of the deck:
  - A. There are basically two options at the far end from the house:
    1. Flush post design,
    2. Cantilevered design,
  - B. And three options to where the deck abuts to the house:
    1. Free standing,
    2. Attached to house band board,
    3. Attached through masonry,
  - C. Handrail details,
  - D. Stair details,
  - E. Ramp details.

### Note:

1. There are specific sizes for handrails and they can be seen on the *How to Build a Deck Guide*.
2. Pressure treated lumber is corrosive to some types of hangers and fasteners. Be sure that you have the correct hangers and fasteners.
3. Deck footings have to be at least 18 inches to the bottom of the footing. However we recommend that you put your footings to at least 24 inches deep if the deck might ever be converted to a sunroom. The footings should be solid concrete, at least 12"x12"x 8" thick, or 12" diameter x 8" thick. We recommend that you do not embed the posts in the concrete, but rather set them on top of the footings in order to true up all of the structural members.
4. Chesterfield does not permit "on-grade deck blocks" to be used. These are wedge shaped concrete blocks intended to be set on the top of the soil. They have slots and recesses in them for the structural members.

The following Inspections will be required:

1. Footing inspection
2. Final inspection

These two inspections can be combined if the footing holes are left exposed and not backfilled.

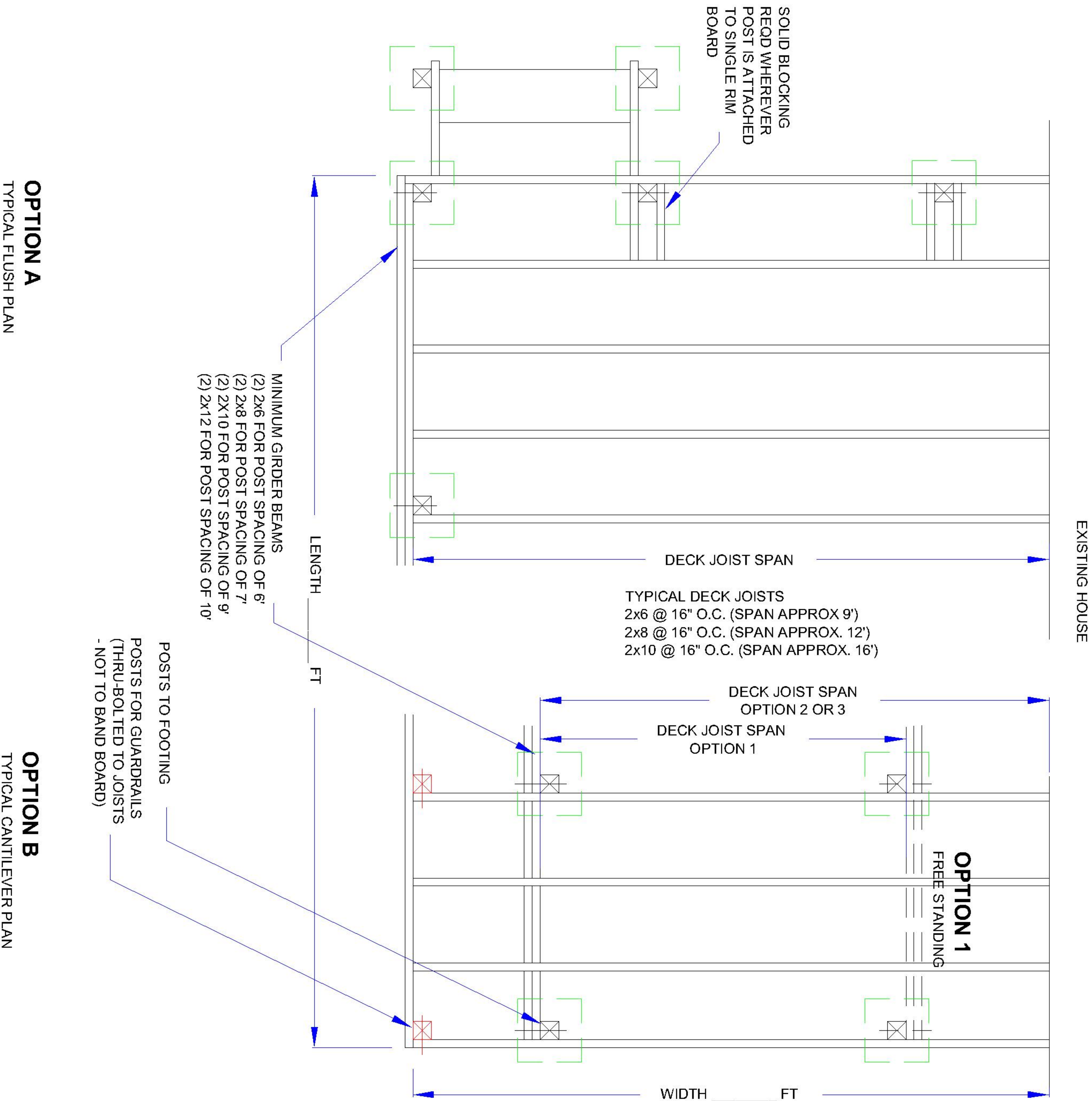


DECK DESIGN

THESE DESIGN SHEETS ARE PROVIDED FOR A SIMPLE, SINGLE LEVEL HOUSE DECK. IF A HOT TUB OR OTHER SPECIAL USE IS INTENDED, SEE A DESIGN PROFESSIONAL. THERE ARE MANY EXCELLENT REFERENCE BOOKS AVAILABLE FROM HARDWARE STORES, LIBRARY OR THE INTERNET TO PROVIDE CUSTOM DESIGNS AND CONSTRUCCION METTHODS.

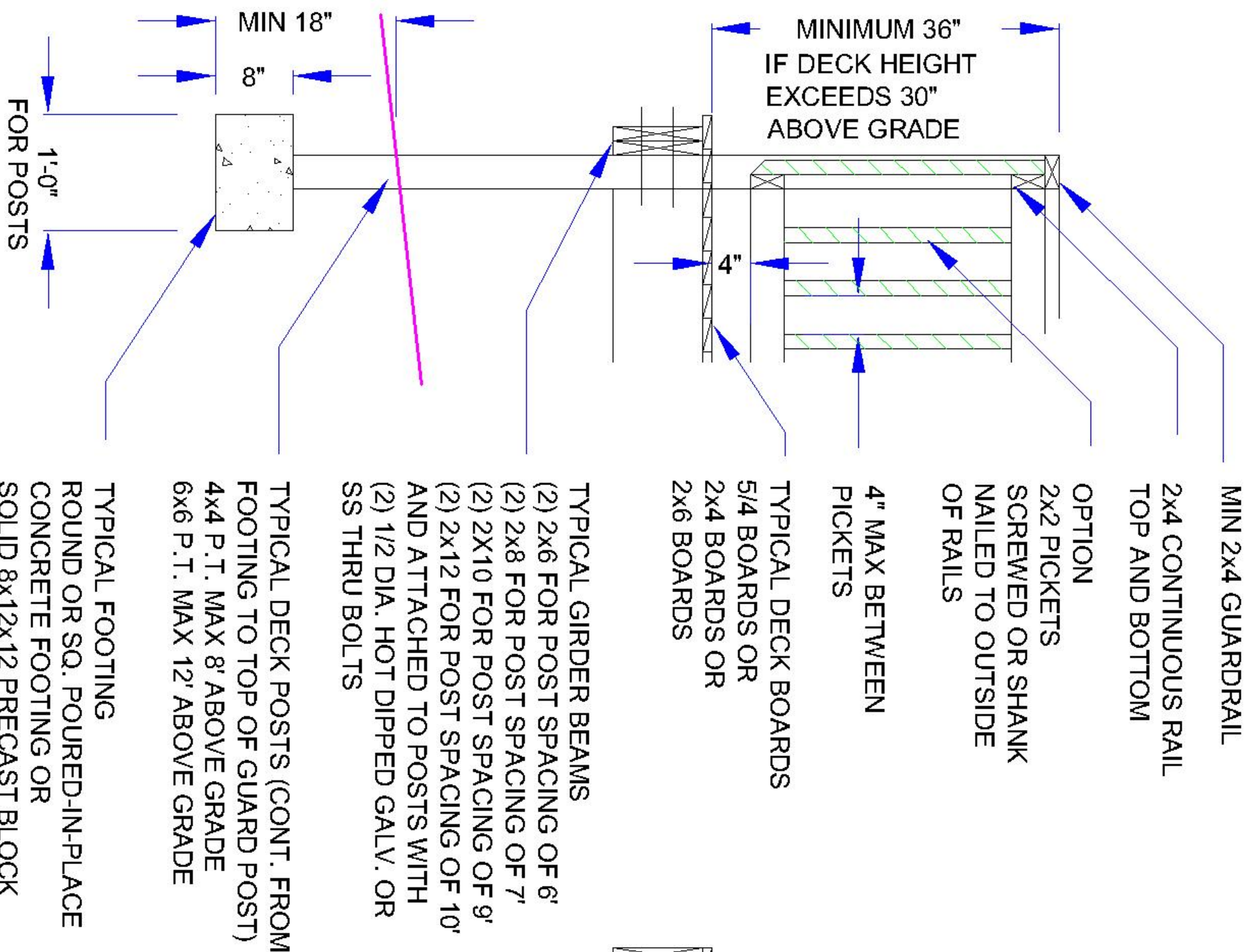
HOW TO DESIGN A DECK:

1. SKETCH YOUR **PLAN** (GRAPH PAPER MAY HELP), SHOW THE RELATIONSHIP OF YOUR EXISTING HOUSE TO THE NEW DECK. DRAW STAIRS. PRINT OVERALL DIMENSIONS ON YOUR PLAN. SHOW THE APPROXIMATE LOCATION OF YOUR POSTS. IF POSTS ARE MORE THAN 12' APART, ADD INTERMEDIATE POST(S) TO KEEP THE SPAN(S) SHORTER.
2. FOR YOUR CONVENIENCE, WE HAVE PROVIDED TYPICAL **CROSS-SECTION** SKETCHES ON SHEET 2. USE THEM IF YOU PREFER, OR DESIGN YOUR OWN SKETCHES.
4. IF YOU CHOSE THE SKETCHES PROVIDED, SELECT THE **CROSS-SECTION** VIEW THAT MATCHES YOUR PLAN. THERE ARE TWO DESIGN OPTIONS (A OR B) FOR THE END OF THE DECK FARTHEST AWAY FROM THE HOUSE, AND THREE DESIGN OPTIONS (1,2 OR 3) FOR THE END OF THE DECK CLOSEST TO THE HOUSE.
4. WE HAVE PROVIDED YOU WITH TYPICAL WOOD MEMBER SIZES FOR YOUR REFERENCE.
5. PREPARE A **PLAT PLAN** (PROPERTY PLAN) SHOWING THE LOCATION OF YOUR HOUSE, THE DECK AND OTHER BUILDINGS IN RELATIONSHIP TO THE PROPERTY LINES. PROVIDE THE APPROXIMATE DIMENSIONS OF THE DECK TO THE PROPERTY LINES. (YOU PROBABLY RECEIVED A PLAT PLAN WHEN YOU PURCHASED YOUR HOUSE; USE IT AND DRAW ON THE DECK.)
6. SUBMIT 1 COPY OF YOUR **PLAT PLAN**, AND 2 COPIES OF THE **DECK PLAN** AND **CROSS-SECTION DETAILS** .
7. PAY THE PERMIT FEE
8. YOU WILL NEED THE FOLLOWING INSPECTIONS:
  - A. FOOTING HOLE INSPECTION PRIOR TO CONCRETE POUR.
  - B. FINAL INSPECTION.

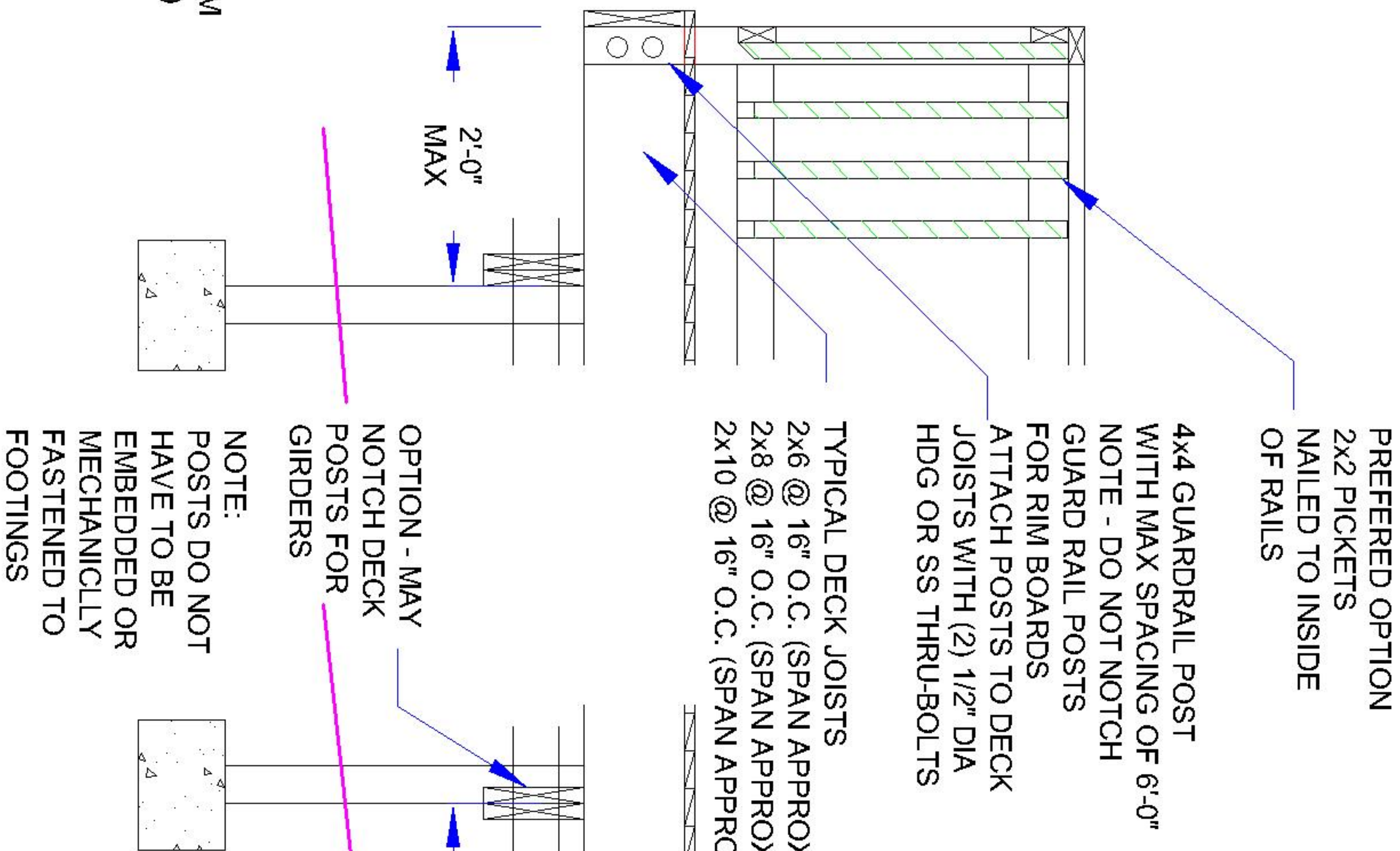




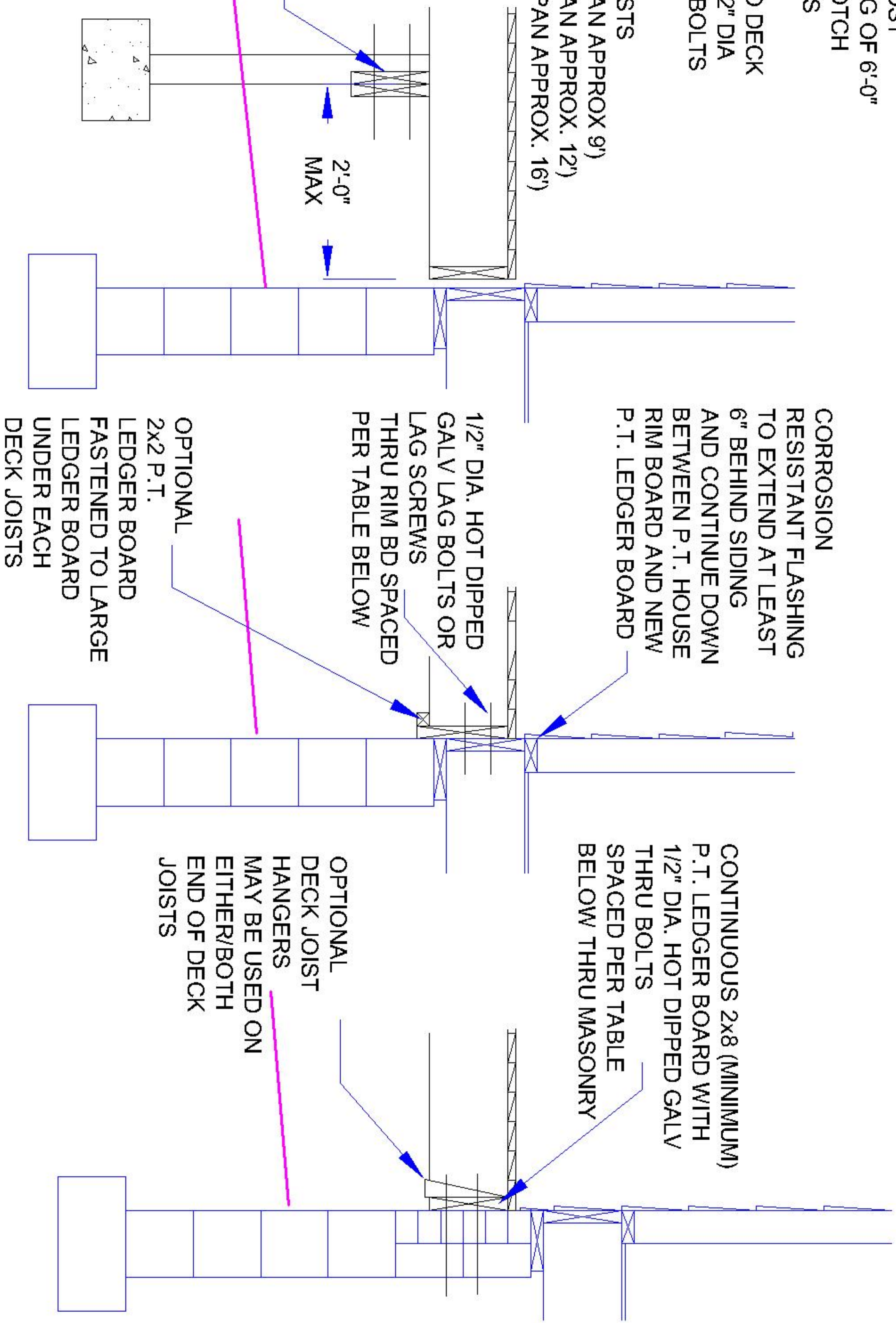
OPTION "A"  
FLUSH POST DESIGN



OPTION "B"  
CANTILEVER DESIGN



OPTION "1"  
RECOMMENDED!!!  
FREE STANDING  
(NOT ATTACHED TO HOUSE)  
NOTE: MUST BE BRACED  
FOR LATERAL STABILITY



OPTION "2"  
ATTCH TO HOUSE BAND

INSTALL THE LEDGER  
SO THAT THE TOP OF  
THE DECKING IS  
1" BELOW THE INTERIOR  
FLOOR HEIGHT.

OPTION "3"  
ATTCH TO FOUNDATION WALL

NOTE - FRAMING SHALL BE BASED ON 40# PER SQ FT LIVE LOAD, AND 10# PER SQ FT DEAD LOAD. DO NOT SET HOT TUB ON THIS DECK WITHOUT FURTHER SUPPORTS AS REQUIRED BY A DESIGN PROFESSIONAL.

DECK SIZE: \_\_\_\_\_ FT LONG x \_\_\_\_\_ FT WIDE

SPECIFY TWO ENDS OF DECK - (A OR B) AND (1,2 OR 3) AND STRUCTURAL ELEMENTS

OR \_\_\_\_\_ OPTION A: FLUSH POSTS DESIGN

OR \_\_\_\_\_ OPTION B: CANTILEVER DESIGN

OR \_\_\_\_\_ OPTION 1: FREE STANDING DESIGN

OR \_\_\_\_\_ OPTION 2: ATTACH TO HOUSE BAND

OR \_\_\_\_\_ OPTION 3: ATTACH TO FOUNDATION WALL

DECK JOISTS 2x \_\_\_\_\_ @ \_\_\_\_\_ " O.C.

GIRDER BEAMS ( \_\_\_\_\_ ) 2x \_\_\_\_\_

P.T. POSTS \_\_\_\_\_ x \_\_\_\_\_ @ \_\_\_\_\_ apart

DECK BOARDS \_\_\_\_\_ x \_\_\_\_\_

**\*\*\*WARNING ON FASTENERS:**  
CHECK WITH YOUR MATETAL SUPPLIER FOR FASTENERS COMPATIBLE WITH THE PRESSURE TREATED LUMBER (USE COMPATIBLE BOLTS, SCREWS, NAILS AND HANGERS)

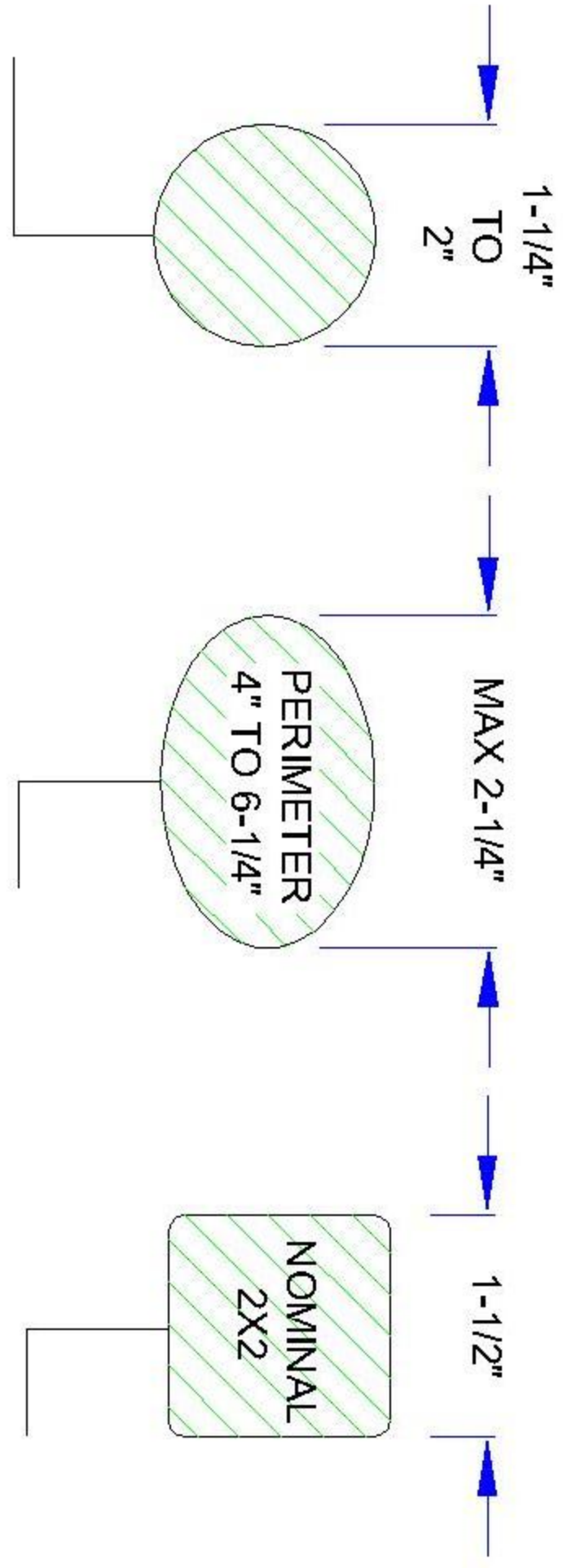
On-Center Spacing for Fasteners Attaching Decks to Houses

Joist span (ft)	6' and less	6'-1"	8'-1"	10'-1"	12'-1"	14'-1"	16'-1"
1/2" x 4" Lag Screws	30"	23"	18"	15"	13"	11"	10"
1/2" Bolt w/ washers	36"	36"	34"	29"	24"	21"	19"

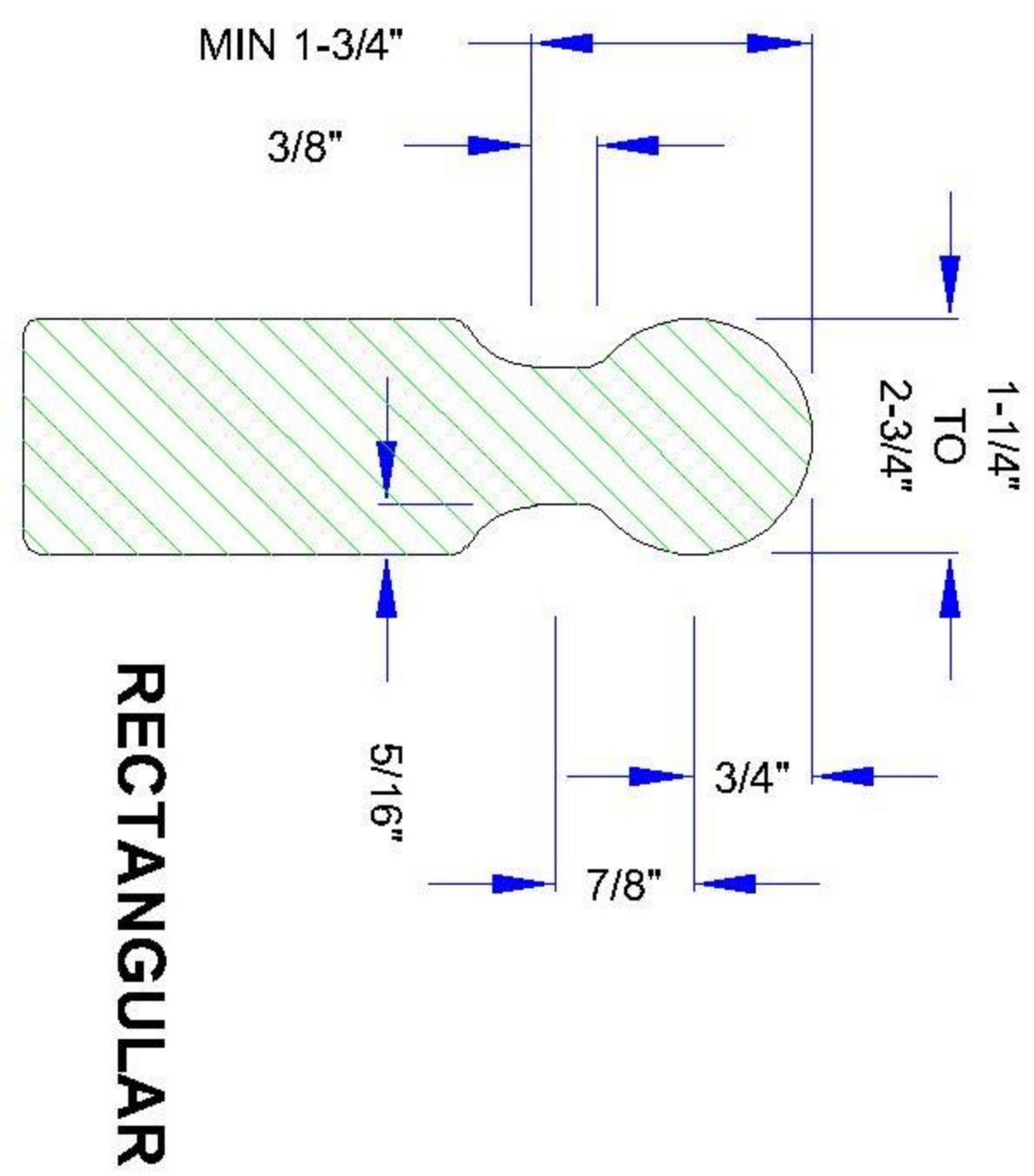
- Notes:
- The maximum gap between the face of the ledger board and face of the house band joist shall be 1/2".
  - The tip of the lag screw shall fully extend beyond the inside of the band joist (board).
  - Ledgers shall be flashed to prevent water from contacting the house band joist (board).
  - Lag screws and bolts shall be staggered and shall not be closer than 2" to the top and bottom of the ledger.
  - Deck ledgers shall be 2x8 Southern Pine (minimum) or other approved method and material as established by standard engineering practice.



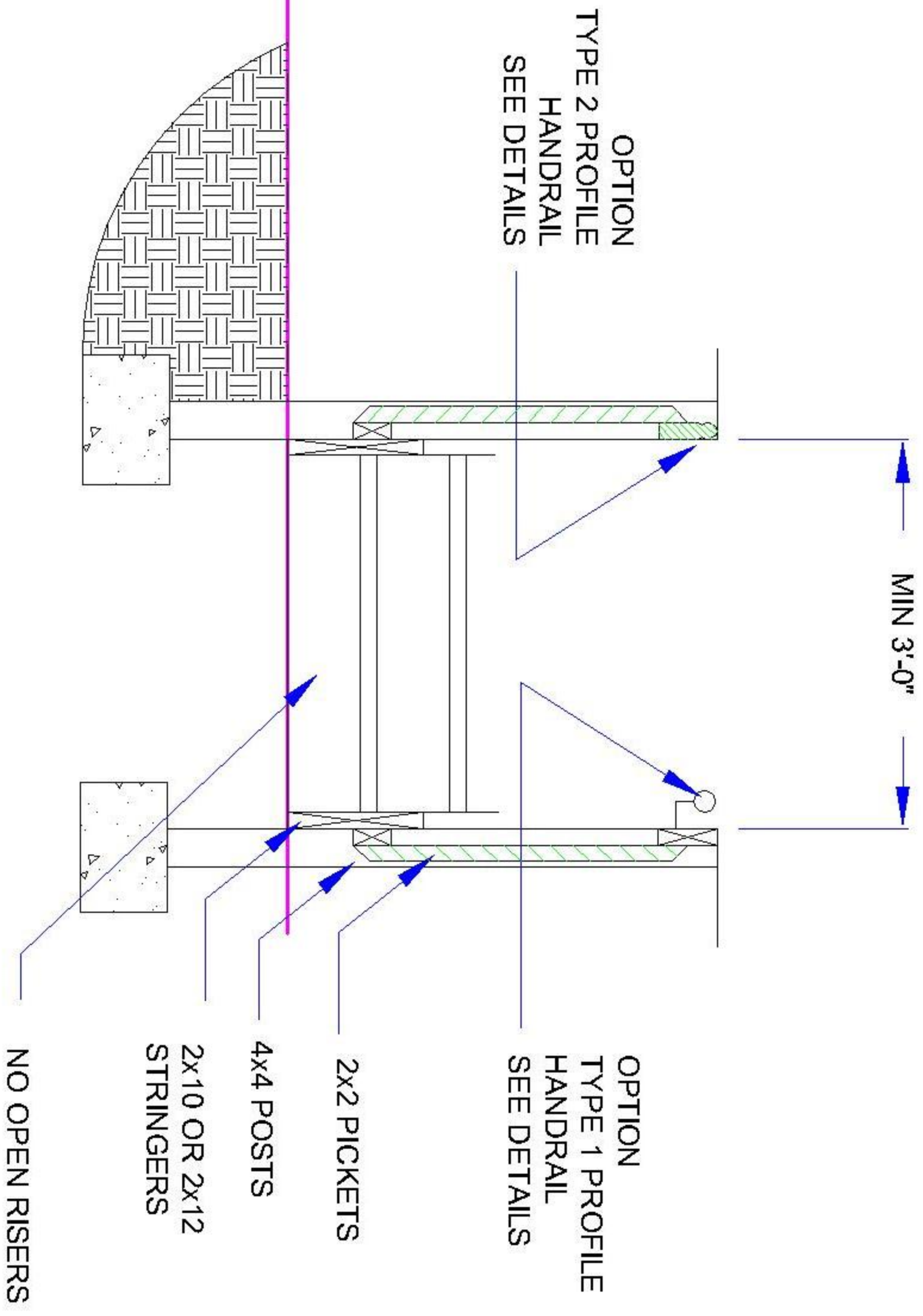
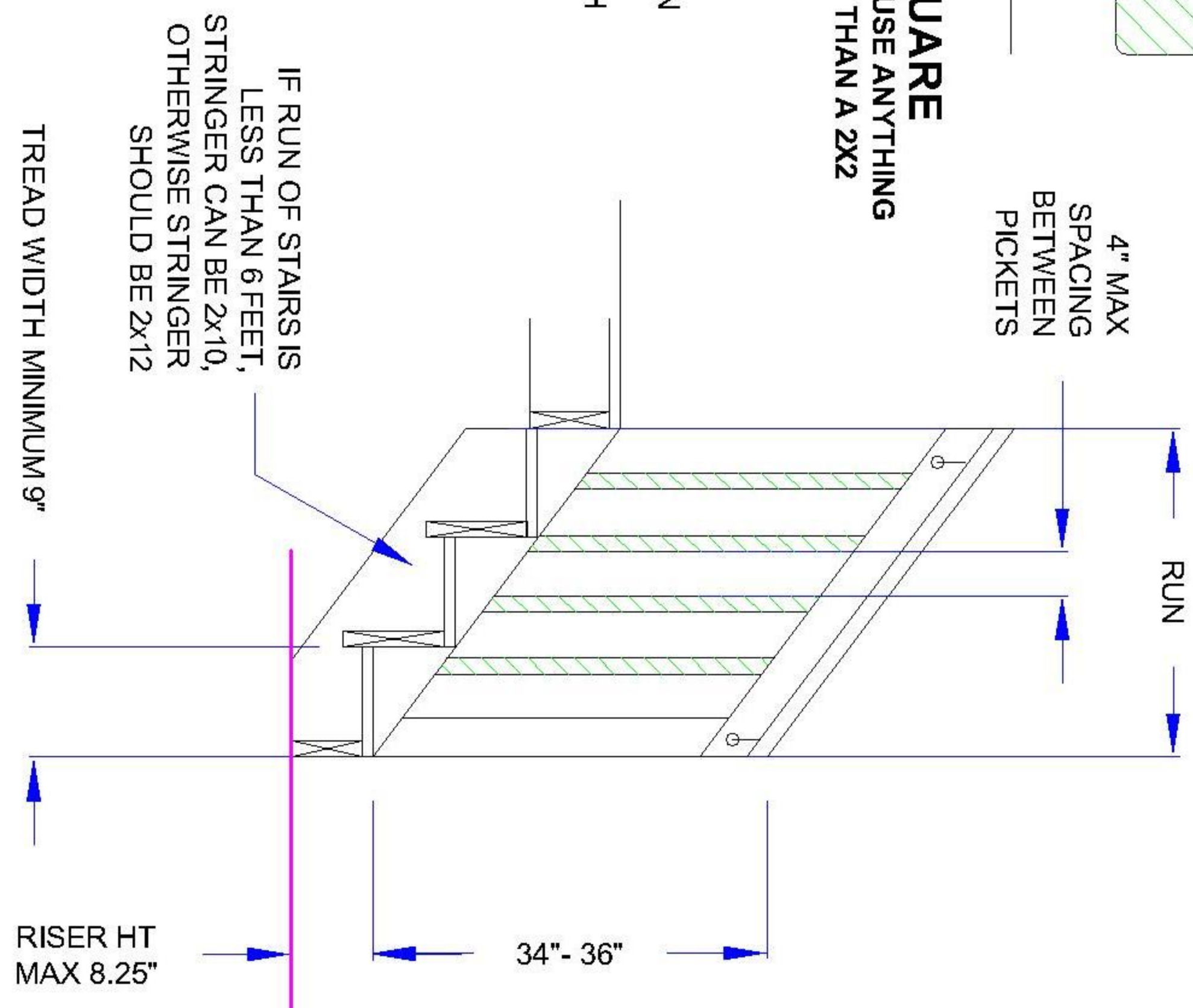
TYPICAL STAIR DETAILS



TYPE 1 HANDRAIL PROFILE  
HANDRAILS WITH A CIRCULAR CROSS-SECTION SHALL HAVE AN OUTSIDE DIAMETER OF AT LEAST 1-1/4" AND NOT GREATER THAN 2". IF THE HANDRAIL IS NOT CIRCULAR, IT SHALL HAVE A PERIMETER OF AT LEAST 4" AND NOT GREATER THAN 6-1/4" WITH A MAXIMUM CROSS SECTION OF 2-1/4"



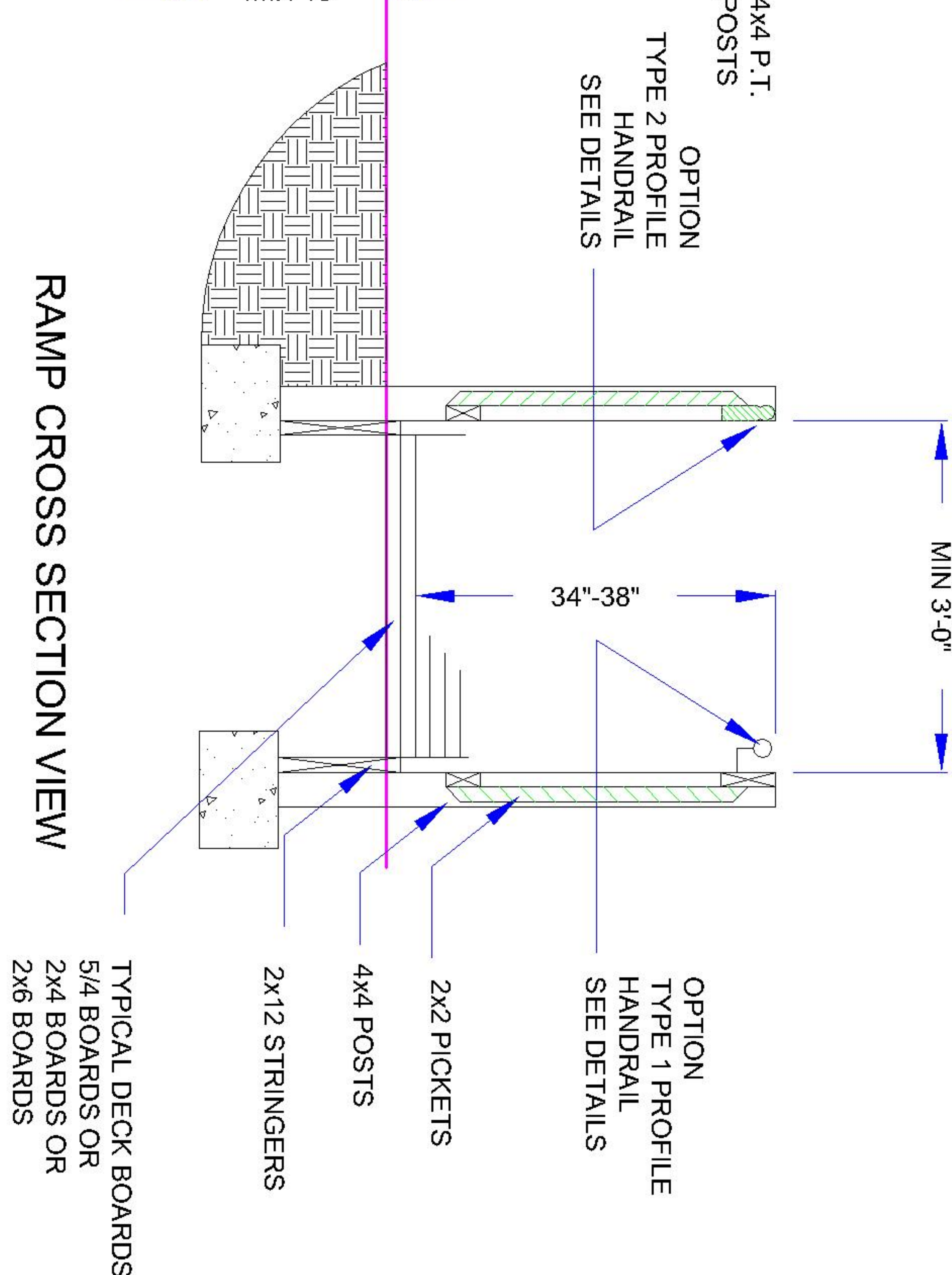
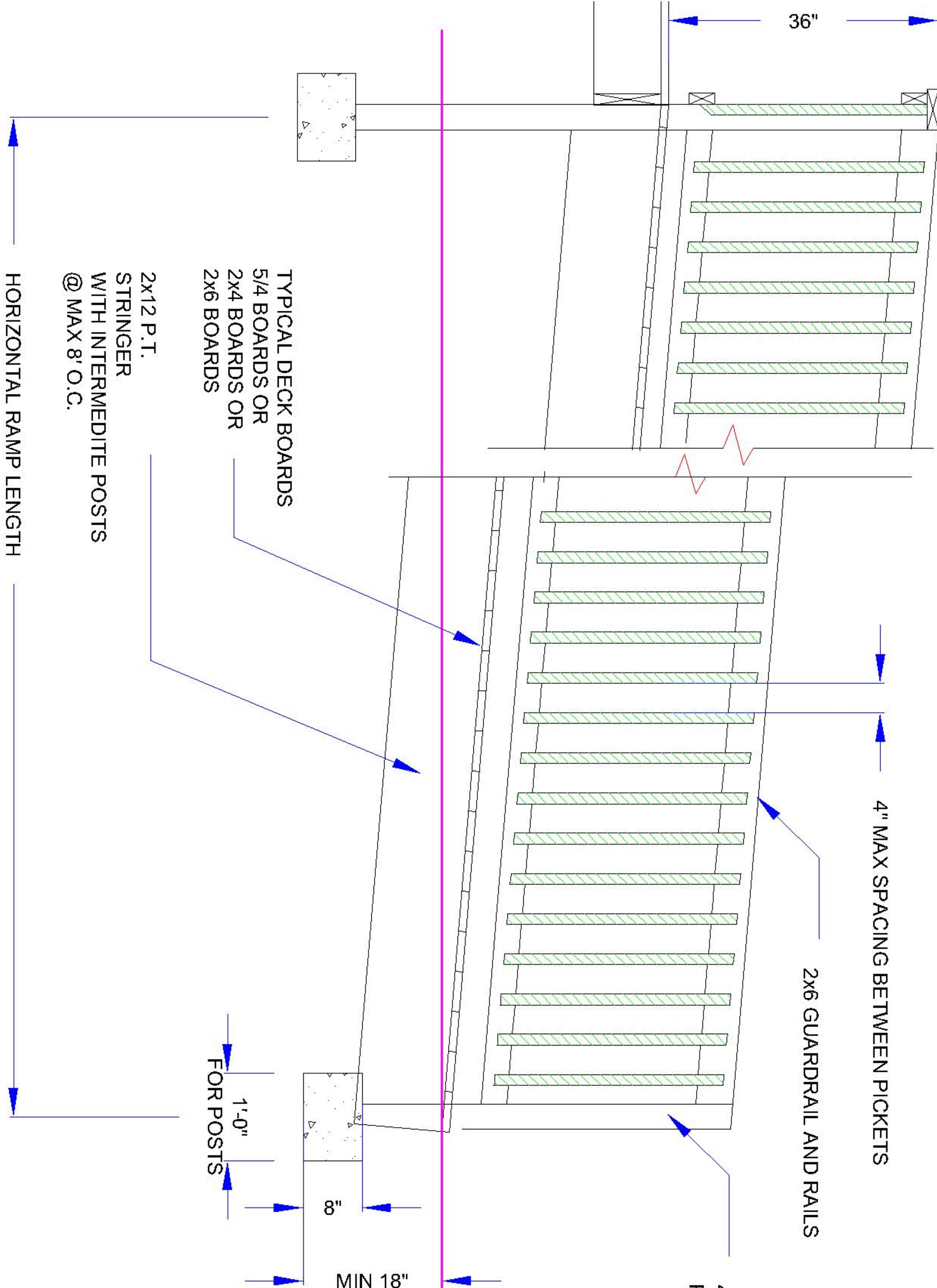
TYPE 2 HANDRAIL PROFILE  
HANDRAILS WITH A PERIMETER GREATER THAN 6-1/4" SHALL PROVIDE A GRASPABLE FINGER RECESS ON BOTH SIDES OF THE PROFILE. THE FINGER RECESS SHALL:  
1. BEGIN WITHIN A DISTANCE OF 3/4" MEASURED VERTICALLY FROM THE TALLEST PORTION OF THE PROFILE AND  
2. ACHIEVE A DEPTH OF AT LEAST 5/16" WITHIN 7/8" BELOW THE WIDEST PORTION OF THE PROFILE. THE REQUIRED DEPTH SHALL CONTINUE FOR AT LEAST 3/8" TO A LEVEL THAT IS NOT LESS THAN 1-3/4" BELOW THE TALLEST PORTION OF THE PROFILE. THE MINIMUM WIDTH OF THE HANDRAIL ABOVE THE RECESS SHALL BE 1-1/4" TO A MAXIMUM OF 2-3/4" EDGES SHALL HAVE A MINIMUM RADIUS OF .01"



- STAIR NOTES:**
- 1. HANDRAILS ARE REQUIRED IF STAIRWAY HAS FOUR OR MORE RISERS
  - 2. HANDRAILS TO BE 34-38" ABOVE NOSING OF STAIR ON AT LEAST ONE SIDE
  - 3. NO OPENINGS GREATER THAN 4" ARE ALLOWED IN RISERS
  - 4. REFER TO SHEET 2 FOR TYPICAL DECK DETAILS
  - 5. HANDRAIL PROFILE SHALL BE EITHER:  
TYPE 1 ROUND OR OVAL WITH BOTTOM SUPPORTING BRACKETS OR  
TYPE 2 CUSTOM DESIGNED WITH BUILT IN HAND HOLDS AS PRESCRIBED BY VIRGINIA CODE



# TYPICAL RAMP DETAILS



- RAMP NOTES:
1. RAMPS MAY BE STRAIGHT OR "L" OR "U" SHAPED.
  2. IF RAMP EXCEEDS 30 FEET LONG, A MINIMUM 3' LONG INTERMEDIATE FLAT LANDING IS REQD.
  3. ADA COMPLIANT RAMP: MAX SLOPE = 1" VERTICAL FOR 12" HORIZONTAL NON-COMPLIANT RAMP (i.e. CONVENIENCE RAMP): MAX SLOPE = 1" VERTICAL FOR 8" HORIZONTAL
  4. REFER TO SHEET 2 FOR TYPICAL DECK DETAILS
  5. HANDRAILS ARE REQUIRED ON AT LEAST ONE SIDE OF RAMP.
  6. REFER TO SHEET 3 FOR ALLOWABLE HANDRAIL PROFILES